

STEREO CASSETTE
TAPE DECK

KX-620

INSTRUCTION MANUAL



INTRODUCTION

Thank you for purchasing our cassette deck. Because we take great pride in the long tradition of quality components the name KENWOOD represents, your choice of our product places you in a distinguished family of connoisseurs of superb high-fidelity sound reproduction.

SERIAL NUMBER

Record your SERIAL NUMBER on the spaces designated on the warranty card. You will find the serial number on the back of the unit.

AFTER UNPACKING

After unpacking, we recommend you inspect and examine the unit for any possible shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend you retain the original carton and packing materials to prevent any damage should you transport or ship your unit in the future.

CONTENTS

INTRODUCTION.....	2
FEATURES.....	2
NOTES.....	3
CONTROLS AND THEIR FUNCTIONS.....	4
CONNECTING INSTRUCTIONS.....	6
CASSETTE TAPE.....	7
LOADING AND UNLOADING OF CASSETTE TAPE.....	8
HOW TO MAKE PLAYBACK.....	8
HOW TO MAKE RECORDING.....	9
DOLBY NOISE REDUCTION SYSTEM.....	10
MAINTENANCE.....	10
TROUBLE SHOOTING.....	11
SPECIFICATIONS.....	12

FEATURES

1. Front-loading with optimum convenience

All controls are neatly arranged on the front panel for easy operation. Designed to provide excellent performance when used with any type of Hi-Fi component system. The tape deck can be placed anywhere, even on amplifier, tuner or receiver.

2. Adoption of Dolby Noise Reduction System

The Dolby N.R. system eliminates undesirable tape hiss noise, improving S/N ratio in high frequency range by about 10 dB.

3. Unique tape selector switch

The tape selector switch functions to select "bias" in 2 steps and "equalization" in 3 steps to ensure optimum recording and playback of various types of tapes, such as normal tape, L.H. tape, chrome tape and Ferri-chrome tape.

4. Input selector with MIC/DIN attenuator

The MIC/DIN attenuator built in the input selector protects the head amplifier against saturation due to over-input; use the attenuator according to the amount of MIC/DIN input. The input selector allows the line input to bypass the head amplifier, improving both S/N ratio and distortion.

5. Full auto stop mechanism

In all mode such as recording, playback, fast forward or rewind, the tape drive mechanism stops automatically as the tape reaches its end.

6. Mirror and lamp in cassette compartment

A mirror and lamp furnished in the cassette compartment provide a full view of the tape running condition.

7. Safety-locked eject mechanism

Model KX-620 is provided with the safety-locked eject mechanism for the tape ejection. When the cassette door is closed, the mechanism is in effect and the cassette tape can not be ejected by pressing the STOP/EJECT button.

8. Free-to-change motor pulley

The tape mechanism is driven by DC motor, so the unit accepts both 50 Hz and 60 Hz power without making any modification.

DOLBY is a Trade Mark of Dolby Laboratories, Inc.

NOTES

CONCERNING LINE VOLTAGE

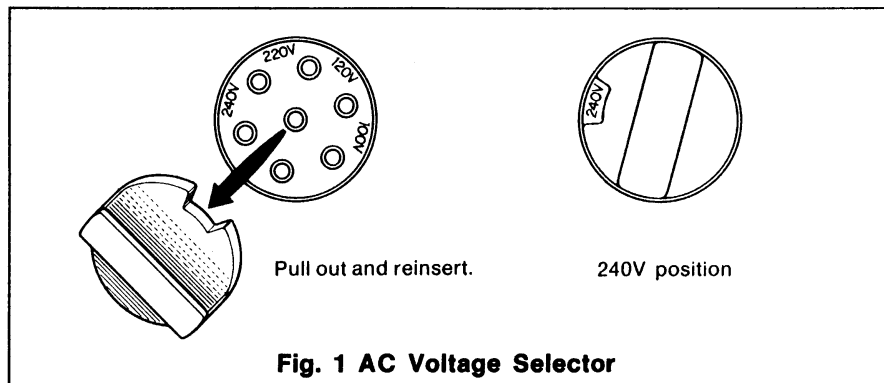
- Units shipped to the countries listed in the table below are designed to be operated with the AC line voltage that is shown, which is standard in those countries.

Destination	AC Voltage
U.S.A.	120V
CANADA	120V
SCANDINAVIA	220V
ENGLAND	220 ~ 240V
AUSTRALIA	220 ~ 240V

- These units are therefore not equipped with an AC voltage selector.** The owners of such units should disregard all reference to these items in this Instruction Manual.

AC VOLTAGE SELECTOR

- Units shipped to countries not listed in the above table are equipped with an AC voltage selector on the rear panel that is preset at the factory to the voltage generally available in the destination area. Before operating this tape deck, make sure that the position of the AC voltage selector matches your line voltage. If not, it must be changed to the proper setting.



- To reset the selector, pull out the selector plug and reinsert it firmly into the AC voltage selector with your line voltage appearing in the cutout of the selector plug.
- Be sure to remove the AC plug when setting the AC voltage selector.
- Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector.

INSTALLATION

- Install the unit on a flat, vibration-free, rigid table or stand.
- Do not place the unit near a heat producing equipment such as a radiator. Avoid direct sunlight.
- The unit may not function properly when used in atmosphere of extremely low temperature or freezing temperature. The ideal ambient temperature is over $+5^{\circ}\text{C}$.
- Do not store or use the unit in a dusty location or in a moist atmosphere. Select a location where air is well ventilated.
- Keep the unit away from a source of magnetic field such as TV set, speaker system, radio or magnetized objects.
- Operate the unit on rated power supply voltage ($\pm 5\%$). Irregular power voltage will result in incorrect operation.

TAPE HEADS

- Keep the tape heads free from magnetism. Do not bring a screwdriver or any other metallic tool close to the tape heads. The head surfaces must be kept clean at all times. Failure to observe these precautions will result in deterioration of sound quality.

POWER SUPPLY FREQUENCY

- The tape mechanism is driven by DC motor, so the unit accepts both 50Hz and 60Hz power without making any modification.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CONTROLS AND THEIR FUNCTIONS

CASSETTE door

To open the cassette door, push it up until it locks.
To close, lightly push it once again until it is unlocked (see page 8).

RECORDING indicator

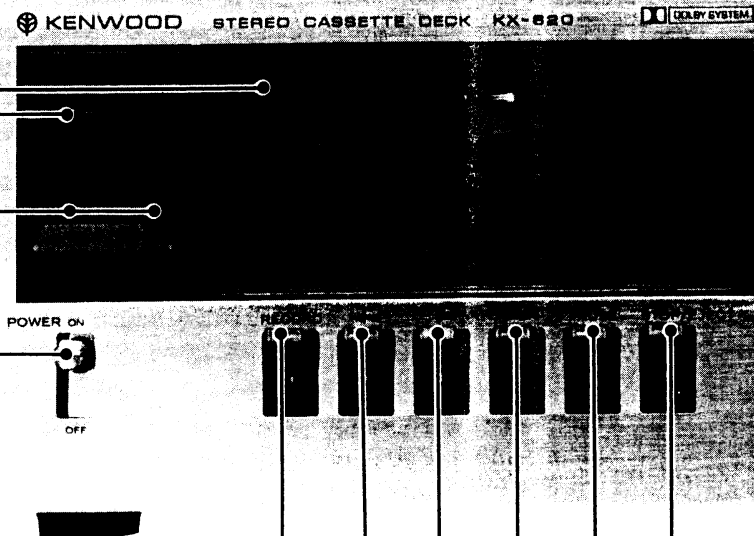
This lamp glows red as the record button is pressed, indicating that the deck is in record mode.

TAPE counter & RESET button

The tape counter drive is associated with tape transport to enable you to accurately locate each point on the tape.
Pushing the reset button resets the counter indication to "000", you do this normally when starting the tape from its very end.

POWER switch

To turn on the power, set this switch to "ON"; the lamps in the cassette compartment and the VU meters will light.
To turn off, set the switch to "OFF".



RECORD button

Press this button for recording. It can not be pressed if cassette is improperly loaded or a claw to prevent accidental erasure is removed.
During record mode, the record pilot lamp lights up and the level meters indicate input levels.

REWIND (◀) button

Pressing this button starts sending the tape fast to the left-hand reel. When the tape reaches the end, the button is automatically released from the locked position.

PLAY (▶) button

The tape starts running for playback as this button is pressed.
For recording, keep pressing the record button and press the play button.
In either case, each button is released from the locked position and the tape stops automatically when the tape reaches the end.

FAST FORWARD (▶▶) button

Pressing this button starts sending the tape fast to the right-hand reel. When the tape reaches the end, the button is automatically released from the locked position.

PAUSE button

Pressing this button during recording or playback allows the tape to stop for a brief period of time. Pressing the same button once again allows the tape to resume running for recording or playback.

CAUTION:
Pressing FAST FORWARD or REWIND button with this PAUSE button pressed does not automatically stop the tape running even when the tape reaches the end.

STOP/EJECT button

As you press this button any other operation buttons get released and the tape stops running. Pressing the button once again ejects the cassette for removal.
Bear this in mind: When the cassette door is closed, pressing the button does stop the tape running but not eject the cassette.

VU meter

The VU meter indicates recording level or output level. Indication "DL" refers to the upper limitation of the Dolby level: the Dolby circuit functions only when the meter pointer indicates the level below this indication.

HEADPHONE and MICROPHONE jacks

Connect your headphones into the headphone jack (upper jack) for sound monitoring during recording or playback. The microphone jack is used for connection of microphone, microphone mixer, telephone pickup coil, etc.

The microphone should be disconnected in the case of recording through DIN cord.

TAPE selector

Set the selector to appropriate position according to the type of tape to be used. Refer to "How to make playback" on page 8 and "How to make recording" on page 9.

INPUT selector

Use this selector knob to select recording source. When recording from microphone or through DIN (record/play) cord, set this knob to "MIC/DIN"; when recording through the line input, set it to "line".

If the input level from microphone or DIN cord is too high, set the knob to "ATT", as it reduces the input level.

Note that recording through DIN cord is not effected if microphone is left connected to the tape deck.

RECORD VOLUME knob

These knobs are used to adjust record input levels.

The inner (L) and outer (R) knobs turn simultaneously. To adjust the L and R channels individually, turn one knob while holding the other (see page 9).



DOLBY N.R. switch

Set this switch to ON when playing Dolby encoded tape or recording a tape in Dolby mode.

Full auto stop mechanism

In approximately 4 seconds after the tape has been wound up and stopped running in one of the following operations — record, play, fast forward and rewind — the functional button of the operation automatically returns back to its home position "OFF".

During these 4 seconds, some low hissing noise may be heard: never worry about this sound — this indicates normal condition.

CONNECTING INSTRUCTIONS

CONNECTION TO STEREO SYSTEM

For connection, use the supplied audio 2P cords

- To play tapes, connect the audio 2P cords between the "line out" of the unit and the "tape play" terminal of your amplifier or receiver.
 - To make recording, connect the audio 2P cords between the "line in" of the unit and the "tape rec" terminal of your amplifier or receiver.
- Note:** Make sure that the white lead (Left) and red lead (Right) are correctly connected.

To use the DIN cord

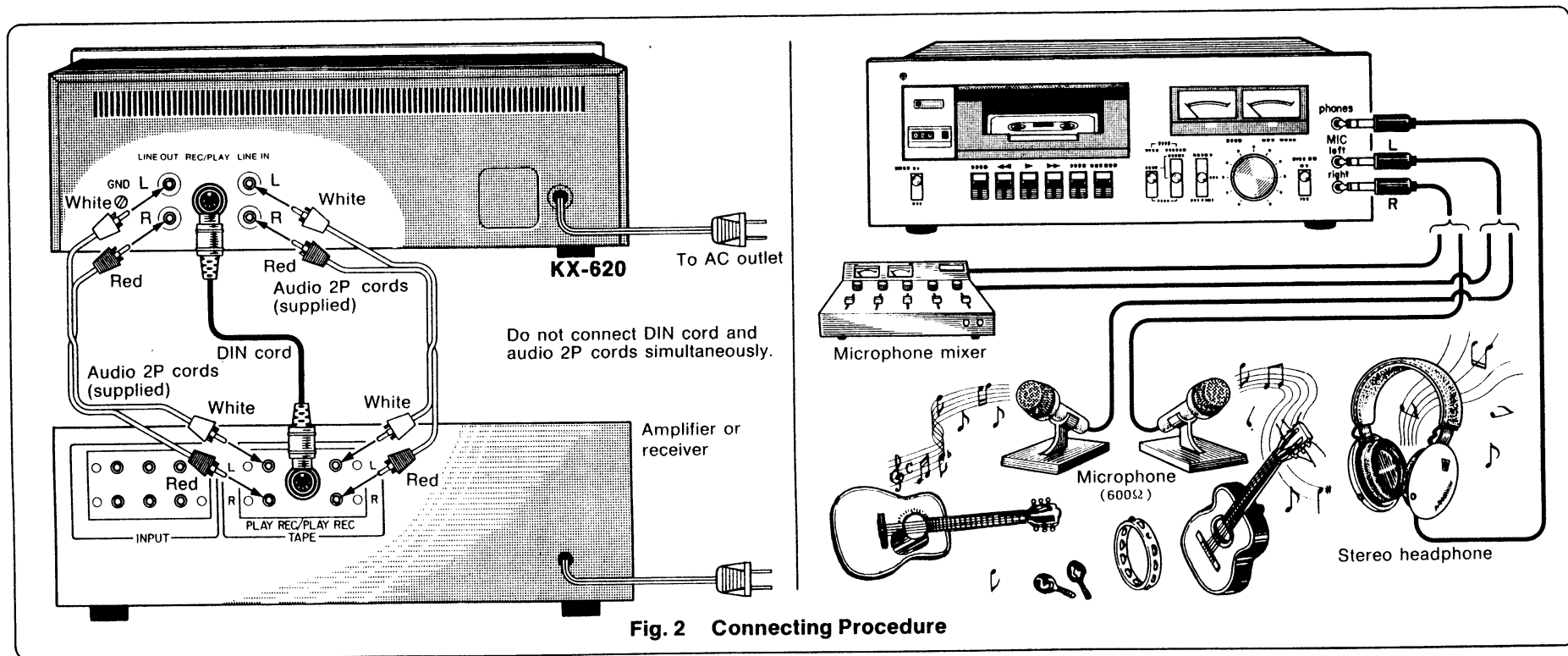
- If your amplifier has DIN connection feature, connect a DIN cord between the unit and the amplifier. This connection permits both recording and playback without making any further connections. When this cord is connected, be sure to disconnect the audio 2P cord and microphone.

RECORDING WITH MICROPHONE

- Use microphone of low impedance (600 Ω). The MIC jack may be connected to the output of a microphone mixer or telephone pickup coil, instead of the microphone. For recording TV or radio programs, use the "line in" or MIC jack according to the strength of output level.
- When making monaural recording with only one microphone, connect it to the left MIC jack. The sound is recorded on both the left and right channels.

USE OF HEADPHONE

- Connect a stereo headphone. This connection permits sound monitoring during recording or playback of tape.



CASSETTE TAPE

CARE OF CASSETTE TAPE

● Accidental Erase Protection

Your precious recorded tape can be protected against accidental erasure by breaking off the claws located on the upper edge of cassette cases (See Fig. 3). Once the claws are removed, the record button cannot be pressed and thus the tape is protected against accidental erasure. Should you desire to make recording on the same tape, close the exposed holes in the cassette with a piece of adhesive tape.

● Exposed Tape or Slack in Tape

When the tape is exposed from the cartridge or the tape has a slack, insert a pencil into the reel hub and turn it until the slack is fully taken up (See Fig. 4).

● Storing of Cassette Tape

Cassette case and tape are easily damaged by heat. Do not expose the cassette to direct sunlight or leave near heat producing equipment such as a radiator. Note that damaged cassette tape results in incorrect tape transport, causing unusual noise, wow, jumping of sound, etc.

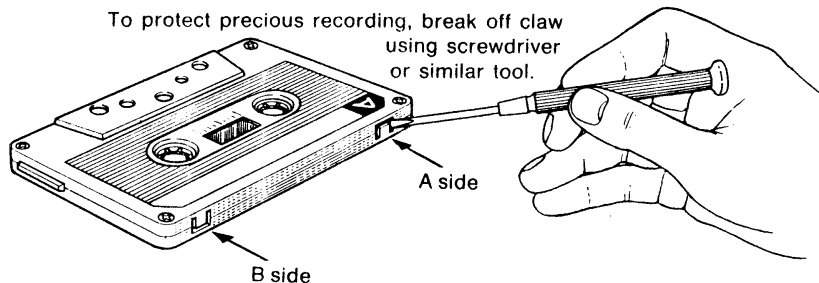


Fig. 3 Accidental Erase Protection

CASSETTE TAPE RECOMMENDATIONS

A good cassette is constructed with closer tolerances and according to the universally standardized specifications; the tape runs smoothly and its magnetic characteristics are uniform throughout its full length. Here are tips for you to tell a good cassette from a bad one:

- 1) No abnormal noise issues forth from a good cassette when the deck is operated on FAST FORWARD or REWIND.
- 2) The plastic case of a good cassette is not warped: take a good look at its front and side before you mount it in the holder.
- 3) Even a good cassette could have a deteriorated (magnetically) tape in it if it has been left standing under the direct sun or at abnormally high temperatures—for a long time.

● Cautions on C-120 cassette tape

C-120 cassette tape does demand ideal working conditions — no sag in the tape, no tape elongation, perfectly clean capstan and pinch roller.

This tape is so fragile that, if the capstan or pinch roller is even slightly dirty, it often coils around the capstan or roller to result in tape breakage.

Consequently, take great care of these conditions, if you would use C-120 tape.

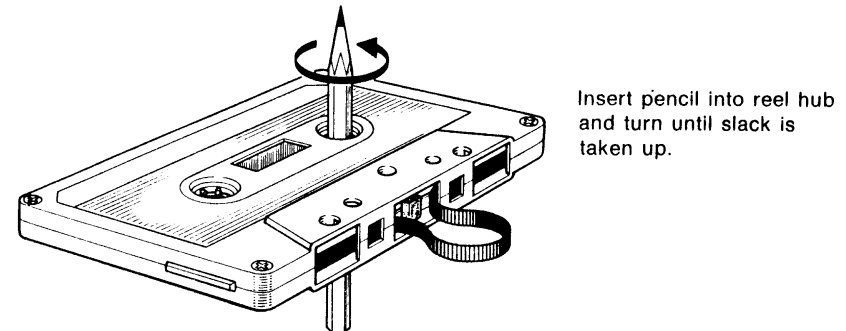


Fig. 4 Method of taking up slack in tape

LOADING AND UNLOADING OF CASSETTE TAPE

LOADING OF CASSETTE TAPE

1. Push the cassette door up until it locks.
2. Press the stop/eject button to raise the cassette holder.
3. With the tape side you wish to play or record facing upward and the opening of the cassette toward you, insert the cassette into the cassette holder as far as it will go. A click sound will be heard.
4. Push the cassette door up once again until it is unlocked. The cassette door will be closed.

UNLOADING OF CASSETTE TAPE

1. Push the cassette door up until it locks.
2. Press firmly the stop/eject button and the cassette will be ejected. This button cannot be pressed if the cassette door is closed.

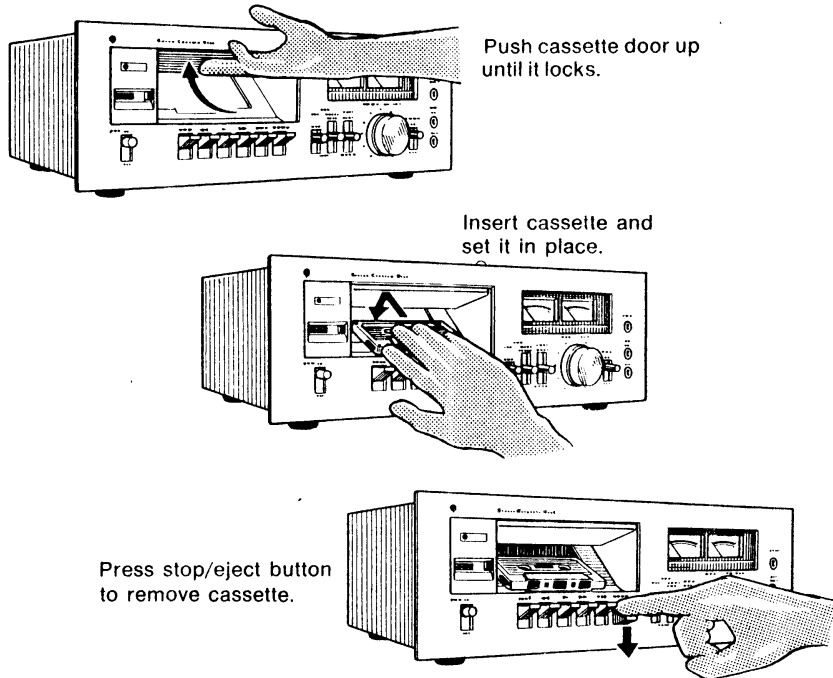


Fig. 5 Loading and Unloading of Cassette

HOW TO MAKE PLAYBACK

1. Turn on the power switch. The lamps in the cassette compartment and the VU meter will light, indicating that the unit is ready for operation.
2. With the tape side to be played facing upward, firmly insert the cassette into the cassette holder and set it in place.
3. Set the tape selector to correct "EQ" according to the type of tape to be played.

For optimum recording and playback, set the tape selector as outlined in the following page "Types of Tapes and Positions of Tape Selector".

Even a chrome tape may not reproduce sufficient high range frequencies that is recorded through another tape deck of 120 μ s high range equalization time constant. In this case, set the tape selector to "normal" position.

Note: Selection of "BIAS" is not required for playback.

4. To play Dolby encoded tape, set the Dolby switch to ON.
5. Press the play button (▶).

The tape will now start playing. Adjust the volume with the volume control of the amplifier or receiver.

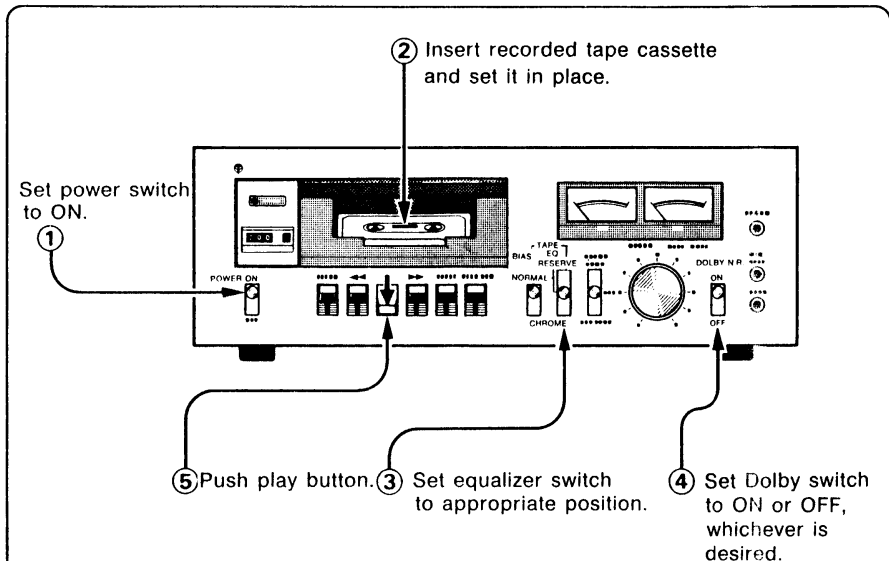
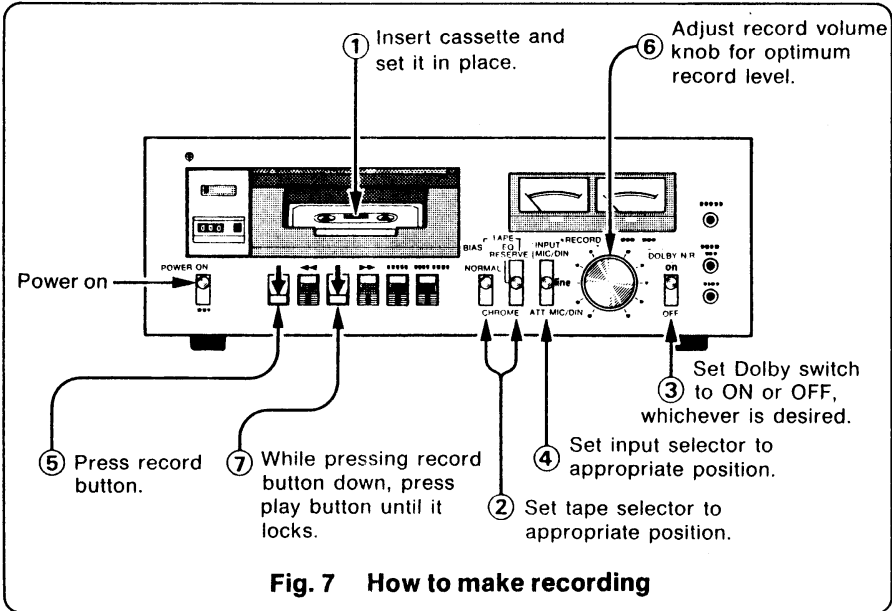


Fig. 6 How to play tape

HOW TO MAKE RECORDING

1. With the tape side to be recorded facing upward, insert the cassette firmly into the cassette holder, and set it in place.
Check to make sure that the cassette has erasure prevention claws on the upper edge.
2. Set the tape selector to appropriate position according to the type of tape to be recorded. Refer to the Table "Types of Tapes and Positions of Tape Selector".
3. To make recording in Dolby mode, set the Dolby switch to ON.
4. Set the input selector to the desired recording source.
5. Press the record button until it locks.
6. Adjust the recording level with the record volume knob so that the pointer of the VU meter indicates about 0VU peak input.
7. While holding the record button down, press the play button (▶). Both buttons will be locked and the tape will be set in record mode.
To timely start recording, press and lock the pause button in advance, lock the record button and play button and then release the pause button.



SETTING OF RECORDING LEVEL

Recording level setting point depends on the type of tape and tape deck to be used. Your trial-and-error will determine optimum recording level. This model uses 0VU = 160 pwb/mm as a reference level which is about 4 dB down below 250 pwb/mm (previous rating) in playback level. The change in the reference level is based on the idea of effectively utilizing the improved tape characteristics, such as S/N ratio, frequency response and dynamic range.

Since the recording level is about 4 dB down below the previous level as a whole, it is possible to make recording of better high frequency response with less clipping effects at peak inputs, even when the recording level setting is performed in the usual manner.

In addition, S/N ratio is remarkably improved with the adoption of Dolby system that reduces hissing noise in tape.

It should be noted that if a tape recorded at the level of 0VU = 250 pwb/mm is played by your tape deck, the output level is increased by about 4 dB; in contrast with this, if a tape recorded by your tape deck is played through another tape deck, the output level is reduced by about 4 dB.

Types of Tapes and Positions of Tape Selector (example)

MAKER	TYPE OF TAPE		BIAS		EQUALIZATION		
			NORMAL	CHROME	NORMAL	RESERVE	CHROME
TDK	D	C-60, C-90	●		●		
	SD	C-60, C-90	●		●		
	M	C-60, C-90	●		●		
MAXELL	LN	C-60, C-90	●		●		
	UD	C-60, C-90	●		●		
SONY		C-60, C-90	●		●		
	HF	C-60, C-90	●		●		
FUJI	FL	C-30, C-60, C-90	●		●		
SCOTCH	LD	C-60, C-90	●		●		
	LH	C-60, C-90	●		●		
BASF	LH	C-60, C-90	●		●		
	LHS	C-60, C-90	●		●		
AGFA	LH	C-60, C-90	●		●		
	SHD	C-60, C-90	●		●		
MAXELL	UD-XL I	C-60, C-90	●			●	
SONY	DUAD	C-60, C-90	●			●	
FUJI	FX	C-60, C-90	●			●	
SCOTCH	CLASSIC	C-60, C-90	●			●	
BASF	FCR	C-60, C-90	●			●	
All makers	Chrome tape			●			●
TDK	SA	C-60, C-90		●			●
MAXELL	UD-XL II	C-60, C-90		●			●

DOLBY NOISE REDUCTION SYSTEM

- The **Dolby Noise Reduction System** was developed in the Dolby Laboratories inc. of England. It is a system to minimize hissing noise in tape. Most of home use Dolby type tape recorders are equipped with "B" type Dolby system as found in your tape deck.
- **Principle of Dolby System ("B" type)**

The Dolby system functions so that it automatically increases recording levels of medium and high frequencies which are important parts of music, when recording signal level is lower than the specified level, and automatically reduces the output level to the normal level during playback. In this way, the tape hissing noise is remarkably reduced without affecting the sound quality.

The Dolby system used in your tape deck improves S/N ratio by about 5 dB at 1 kHz and about 10 dB at 10 kHz.

MAINTENANCE

PERIODICAL CHECK-UP

Generally, machines operated over long periods without proper care and maintenance may develop trouble due to poor lubrication, wear, deterioration or the like. To ensure a long service life and stable operation, periodical check-up at an interval of two years or so, if possible, is recommended even if the equipment is in normal condition. Please have such a periodical check-up made through the dealer.

LUBRICATION

Since oil-less metal is used at all moving contacts points, lubrication will not be necessary for about one year. If any revolving parts are found to be noisy or not turning smoothly, it is advisable to consult your local dealer, because some special technique is needed.

HEAD CLEANING

To clean tape heads (See Fig. 8):

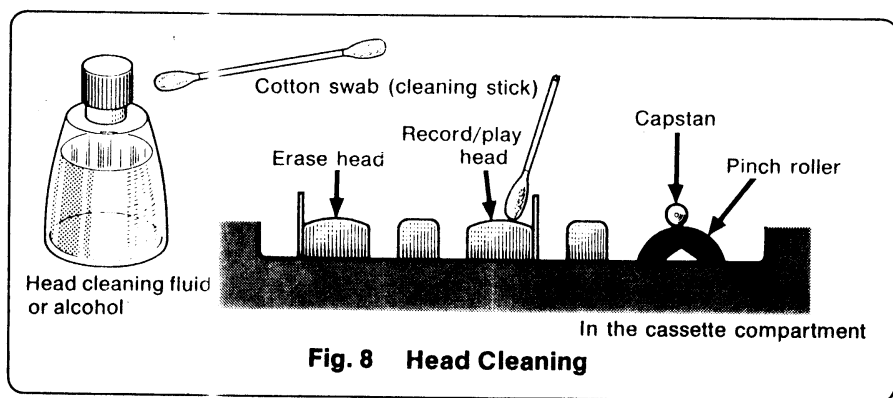
1. Press the stop/eject button to remove cassette from the cassette holder.
2. Turn off the power switch, then lower the cassette holder and press the play button(▶).
3. Clean the surfaces of the erase head, record/play head, pinch roller and capstan with the supplied cleaning stick (Use after cutting short to two pieces.) or soft cloth, gauze (moisten the stick with alcohol).

NOTE: When cleaning, be careful not to give any shock or strain to the precision-adjusted parts such as the tape guide.

CLEANING THE PANEL AND COVER

Clean the panel and cover gently with dry cloth or silicone cloth. In case they are badly dirtied, wipe them with cloth wetted in soapsuds and wrung.

Never use thinner, alcohol, benzine or other volatile liquids.



TROUBLESHOOTING

The following shows how to correct problems that may be encountered. Read this instruction manual carefully before operating.

TROUBLE	CAUSE	REMEDY
Tape not running	<ul style="list-style-type: none"> • Power cord plug out • Power switch OFF • Tape fully wound • Pause button locked 	Check plug contact. Turn switch to ON. Rewind or turn cassette over. Release button.
REC button not pressed	<ul style="list-style-type: none"> • Cassette not inserted • Claw at back of cassette removed 	Insert cassette in place. Cover hole with cellotape, etc.
Poor sound	<ul style="list-style-type: none"> • Dirty heads 	Clean with supplied cleaning stick and alcohol.
Distortion in sound	<ul style="list-style-type: none"> • Wavy tape • Distortion in recording 	Use new cassette tape. Use tape of good recording.
Distortion on recording	<ul style="list-style-type: none"> • Recording level too high 	Adjust properly observing VU meter.
Excessive noise	<ul style="list-style-type: none"> • Magnetized head • Noise in tape • Loose audio-2P-cords • Noise from external equipment 	Demagnetize with head eraser. Use good tape. Check input and output jacks for proper connections. Place recorder away from equipment (TV set, fluorescent lamp, etc.)
No playback	<ul style="list-style-type: none"> • Incorrect connections of audio-2P-cords • Incorrect setting of input selector of amplifier 	Check connections referring to paragraph "Connecting Instructions". Set selector to right position.
No recording	<ul style="list-style-type: none"> • Incorrect setting of input selector 	Set selector to right position.
No recording with DIN cord	<ul style="list-style-type: none"> • Microphone plugged in 	Disconnect microphone.
Improper recording with DIN cord	<ul style="list-style-type: none"> • Mismatch with amplifier 	Use LINE INPUT and LINE OUT PUT connectors.
Excessive wow	<ul style="list-style-type: none"> • Dirty capstan or pinch roller • Tape not wound properly in cassette 	Clean with supplied cleaning stick and alcohol. Rewind or fast wind tape.
Tape stops during recording or playback	<ul style="list-style-type: none"> • Tape is loose or exposed from cassette and not properly engaged between capstan and pinch roller 	Take up slack in tape by turning reel hub of cassette with such as a pencil.

NOTE: If the tape deck is not powered by turning the power switch to ON after making correct connections, the protection fuse in the tape deck may be blown out. In this case, please contact your dealer.

SPECIFICATIONS

Type	Front-Loading Stereo Cassette Deck with Dolby
Track System	4-Track, 2-Channel Stereo/Mono Recording/Playback
Recording System	AC Bias System (Bias Frequency: 85 kHz)
Erasing System	AC System
Tape Speed	1-7/8 ips (4.76 cm/sec)
Heads	Hard Permalloy Recording/Playback Head × 1, Ferrite Erasing Head × 1
Motor	Electronically-Controlled DC Motor
Wow and Flutter	Less than 0.09% (WRMS)
Fast Winding Time	Approximately 80 seconds with C-60 Cassette Tape
Frequency Response	Normal Tape: 30 Hz ~ 13,000 Hz (40 Hz ~ 11,000 Hz ±3 dB) Chromium Dioxide Tape: 30 Hz ~ 16,000 Hz (40 Hz ~ 12,000 Hz ±3 dB)
Signal to Noise Ratio	Dolby on: 58 dB (Normal Tape), 61 dB (CrO ₂ Tape) Dolby off: 50 dB (Normal Tape), 53 dB (CrO ₂ Tape)
Inputs Jacks	Microphones × 2: 0.2 mV/8k ohms
Input Sensitivity/Impedance	Line × 2: 77.5 mV/180k ohms DIN × 1: 0.4 mV/4k ohms ATT Mic/DIN: — 12 dB
Output Jacks	Line × 2: 0.775V (OVU)/100k ohms
Output Level/Load Impedance	Headphones × 1: 48 mV/8 ohms DIN × 1: 0.775V (OVU)/100k ohms
Built in Features	Dolby System* Full-Auto Stop Mechanism in All Modes Two Step Bias Selector (Normal—Chrome) Three Step Equalization Selector (Normal—Chrome—Reserve)

Three Step Input Selector
(Mic/DIN—Line—ATT Mic/DIN)
Microphone/DIN Attenuator
Illuminated Cassette Compartment and Mirror
LED Recording Indicator, Three Digit Tape
Counter
Two Large Size Illuminated VU Meters
Two Microphone Jacks, Headphone Jack
DIN Rec/Playback Connector

Power Requirements

AC 120V, 60 Hz	U.S.A. and CANADA Model
AC 220V, 50Hz	SCANDINAVIA Model
AC 220 ~ 240V, 50/60 Hz	ENGLAND and AUSTRALIA Model
AC 100/120/220/240V, 50/60 Hz	Others

Power Consumption 11 watts

Dimensions W: 430 mm/16-15/16"
(454 mm/17-7/8" with sideboard)
H: 149 mm/5-7/8"
D: 300 mm/11-13/16"

Weight 7 kg/15.4 lbs (8.4 kg/18.5 lbs with sideboard)

Supplied Accessories Stereo Connection Cord × 2
Head Cleaning Kit/1

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

NOTE: *Dolby is a trademark of Dolby Laboratories, Inc.



PRINTED IN JAPAN B50-1414-10 (K1 XL) (G)

890N/848 D12345/949 67890N/950